

Book problems: p. 675

#8- don't answer book questions. Instead, complete a 95% confidence interval. (assume all conditions met)

#34- don't answer book questions. Instead, test for a negative association btw 6 month temp and avg crawl age.

For #34:

- Type data in calculator
- Write hypotheses
- Run LSR line
- Do conditions
- Do mechanics of test (LinReg T test)
- Conclusion

8) Conditions met --> t-distribution --> LinReg T Int

$$(0.771639) \pm (1.962)(0.2574) = (0.2666, 1.2767)$$

We are 95% confident that as age increases by 1 year, cholesterol level increases btw 0.2666 & 1.2767 points.

$$df = 1044$$

34) $H_0: \beta_1 = 0$
 $H_a: \beta_1 < 0$

LinReg atbx L_1, L_2

Conditions:

- | | |
|-------------------|---|
| 1) SRS | 1) assumed representative |
| 2) linear data | 2) scatterplot is linear, one poss. outlier |
| 3) independent | 3) each baby is indep. of the others |
| 4) normal resid. | 4) normal prob. plot of resid. is roughly linear --> linear data |
| 5) Equal variance | 5) the residual plot shows no change in the spread of the residuals |

conditions met --> t-distribution --> LinReg T test

$$t = \frac{-0.0778}{0.02512} = -3.097$$

$$-3.097 = \frac{-0.0778}{SE_b}$$

$$P(t < -3.097 | df = 10) = 0.00565$$

We reject H_0 b/c p-value of 0.00565 < $\alpha = 0.05$.

We have sufficient evidence that the slope of the population regression line between 6-month temp & avg. crawling age is less than to 0.

Thus as 6 month temperature increases, average crawling age decreases.